

# Taking Care of Unfinished Business – Watts Bar 2

QUARTERLY UPDATE  
December 2012



## OVERVIEW

On April 26, 2012, the TVA Board of Directors approved continuing to proceed with the completion and startup of Watts Bar Unit 2 in accordance with a revised Estimate to Complete (ETC). The revised estimate included additional funding of \$1.5 billion to \$2 billion, bringing the total cost to complete the unit to the range of \$4 billion to \$4.5 billion, with the most likely estimate of \$4.2 billion. Estimated completion is between September and December 2015.

As part of the ETC development process, the Watts Bar 2 team conducted a top-to-bottom analysis of the nuclear project, identifying specific root causes and areas for improvement. The team also committed to perform quarterly updates of the ETC to maintain integrity of the estimate and provide transparency into project performance.

The review for the August-October 2012 period found:

- Project performance is consistent with the ETC plan.
- Watts Bar 2 is tracking to the schedule for completion by December 2015 and remains in the total cost range of \$4 billion to \$4.5 billion for completion.
- Safety performance continues to be excellent.
- The quality of work being performed remains high.
- The overall pace of installing commodities – such as valves, piping, and cable – is on track to meet scheduled project completion milestones.
- Project challenges have been identified and are being addressed.
- No new short-term risks were identified that may compromise project completion, with regulatory and licensing issues remaining the primary risks.
- Organization health has improved.

## SAFETY

During the quarter, the project exceeded 17 million work hours without a lost-time incident, and the Recordable Incident Rate remained better than the goal of 0.49.

## QUALITY

The quality of work performed remained high. The primary measure of project construction quality is the Quality Control Acceptance rate, which continued to track above 95 percent.

## Quarterly Highlights

- Achieved over 17 million work hours without a lost-time incident
- Hired additional senior managers experienced in nuclear construction to further strengthen the project team
- Further reduced Corrective Action Program backlog actions to 252 from approximately 1,700 in April
- Improved the monthly work package closure rates, increasing to 410 packages closed in October from 135 in July
- Accomplished activities that were planned as part of the Watts Bar 1 refueling and maintenance outage safely and on schedule
- Continued improvement in organizational culture



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## COST

The Cost Performance Index (CPI) tracked to plan, coming in at 1.03 for Fiscal Year (FY) 2012 and project-to-date. The CPI measures whether workers are completing construction activities within planned work time. A CPI of 1.00 or higher indicates tasks are being performed in accordance with ETC estimates.

## SCHEDULE

Schedule performance for the quarter, FY 2012, and the project-to-date is over 1.0, indicating that the work is being performed as expected. Additionally, the project earned 16,303 more work hours than planned from the time the ETC was issued through the end of FY 2012 on Sept. 30, 2012.

## OVERSIGHT

The Nuclear Construction Review Board (NCRB), an independent committee of industry experts, said in a review of the project that progress continues to be made toward completion, work groups are better aligned, and the commitment of workers to safety has reached the level of industry best practices. The Watts Bar 2 team is following up on several NCRB recommendations, including better communication of overall project completion metrics.

The Watts Bar 2 team continued to take actions to address recommendations from a comprehensive audit completed earlier this year by TVA's Office of the Inspector General (OIG). Six of seven OIG recommendations have been addressed. Actions, such as implementing a plan to further improve communications and alignment at the project, are being taken to address the OIG's final recommendation.

## ORGANIZATIONAL HEALTH

The organizational culture at Watts Bar 2 continues to improve as shown by 10-point improvement in the Nuclear Construction Organizational Health Index (OHI) performance. The Employee Concerns Program (ECP) survey of contract personnel yielded similar results.

The number of allegations made to TVA's ECP and the Nuclear Regulatory Commission (NRC) is decreasing, indicating that the safety culture is improving. The project continues to encourage workers to express concerns and to resolve those issues through line supervision, management, and the Corrective Action Program, or if they prefer, another avenue such as the ECP, the OIG, or the NRC.

## GOING FORWARD

Moving forward, the project focus will remain on completing bulk construction work and improving the timing and quality of work documents. In addition, the team is:

- Beginning to optimize processes that are used to transition from the construction phase to system completion.
- Developing a plan to unbundle complex work packages that contain large scope, multiple systems, and/or multiple commodities.
- Continuing to close the gap between the completion of construction work and documenting the closure of work performed.



## Project Risks

While steady progress is being made, there are challenges ahead for the Watts Bar 2 project. Those include:

### Fukushima

While the regulatory framework for the industry response to the Fukushima event has not been finalized, the project is developing plans based on current information and working on activities such as engineering for back-up emergency and communications equipment.

### Waste Confidence

The NRC is in the process of reissuing a Waste Confidence rule that was recently invalidated by a court because the rule failed to address the generic long-term impacts of the on-site storage of spent nuclear fuel after a plant is shut down. The time it may take to reissue the rule has the potential to impact the final licensing process for the project, but it is not expected to impact the project in the short term. The project team continues to closely follow the issue and has developed an alternate site-specific approach to address the matter.

### Licensing Strategy Implementation

Complex regulatory and licensing issues must be addressed prior to operation of Watts Bar 2. The project has developed a licensing strategy and structure to address the issues and to help ensure licensing documents are completed in a high quality and timely manner.